

Original Article

MORBIDITY PROFILE OF ELDERS IN OLD AGE HOMES IN CHENNAI

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Anitha R, Palani.G, Sathiyasekaran.BWC. Morbidity Profile of Elders in Old Age Homes in Chennai. Natl J Community Med. 2012;3(3):458-64.

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Email: anithajayaraju@yahoo.co.in**Date of Submission:** 13-06-12**Date of Acceptance:** 16-08-12**Date of Publication:** 01-09-12

ABSTRACT

Background: In India "aged" population is the second largest in the world. The proportion of elders living in old age homes in India is increasing. This study was undertaken to explore the health problems of elders in old age homes.**Methods:** This cross sectional study was done among elders in selected old age homes in Chennai city. Data on health problems was collected by clinical examination and available medical records.**Results:** Medical services were found available in all the homes. Only 3.3% of elders were clinically free from health problem and the remaining elders were suffering from one or more health problems. Major health problems of elders were cardiovascular diseases 42.8% dental problem 37.6% and visual problem 35.1%.**Conclusion:** The present study show that greater proportions of institutionalized elders were suffering from wide range of morbidities.**Key words:** Elders, health problems, old age homes.

INTRODUCTION

Ageing and health is the theme of World Health Day 2012. Over the past century life expectancy has increased dramatically and the world will soon have more older people than children. Undoubtedly, the population of India is ageing and will continue to age steadily in the next few decades. It is estimated that the population aged

60 years and above will grow from 77 million (7.4% of the total population) in 2001 up to 300 million (17%) by 2050.¹ In India, the life expectancy has steadily gone up from 32 years at the time of independence to over 65 in 2001.² In next 50 years the expectancy of life at birth may well surpass 80 years in most countries of the world, including India.³

The greatest challenge of the 21st century will be to improve the quality of life as we age. Health is the most important prerequisite for people to enjoy life especially in their older years.⁴ Most people enter old age in poor health as a result of lifelong exposure to health risks, deprivation, lack of knowledge and resources for health promotion and poor access to health services. Forty five percent of aged Indians have chronic diseases and disabilities.³ The common diseases among the ambulatory elderly are Hypertension, Cataract, Osteoarthritis, COPD, Ischaemic heart disease, Diabetes mellitus, Benign prostatic hypertrophy, Dyspepsia, Irritable bowel Syndrome and Depression which account for 85% of the burden of ill-health.³

Social, economic, and cultural changes taking place in some of the developing societies leave families less able to care for their frail relatives and thus portend an increasing demand for institutional care. Institutionalization of elders should be avoided, but in some cases there are no other options available. Old age homes are being established with the help of government and voluntary organizations to care the aged particularly those who are lonely with no children, who are widowed etc. With the increasing elder's population, the number of persons institutionalized also will be increasing. Many studies on geriatric care are either hospital or population based. Comprehensive data on the morbidity pattern of aged in old age homes in India is not available. Even the few studies relating to the institutionalized elders did not contain adequate information regarding their health problems. Therefore this study was undertaken to assess the morbidity profile of elders in old age homes.

MATERIALS AND METHODS

This cross sectional study was done among the institutionalized elders in the selected old age homes in Chennai City. The data was collected between January 2004 to June 2004. List of old age homes in Chennai City was obtained from Directory of Old age Homes in India 2002, published by Help Age India. There were a total of 37 old age homes in Chennai City as per the Directory. When these homes were contacted over phone, it was found that 2 homes were closed and 4 others were only day care centres. Subsequently a letter was sent to all homes except the above, seeking permission to carry out the study among the inmates. Only 13 old

age homes gave permission to conduct the study. Out of 13, the inmates' strength was less than 20 in 4 homes. The remaining nine old age homes were included in the study.

In the absence of relevant data for institutionalized elders, the prevalence of morbidity and disability among the elder population which was found to be 45% by AIIMS³ has been taken for calculating sample size. Accordingly, the sample size calculated with an allowable error of 15% was found to be 210. From 9 old age homes, 210 elders were selected by population proportionate to size method. The elders from each home were selected by simple random sampling technique using the table of random numbers. After obtaining permission from the heads of institutions, the selected elders were contacted in person and explained about the study and were assured of the confidentiality of their identity. Informed consent was taken from all the participants before collection of data. The data were collected by interviewing them using a predesigned and pre tested questionnaire as well as by clinical examination.

Mercury sphygmomanometer was used to measure blood pressure. Elders with systolic blood pressure >160 mmHg and/or diastolic >95 mmHg were considered as hypertensive. A portable weighing machine was used to record the weight of the study subjects. Zero error was checked before each recording and weight was recorded with minimal clothing and without footwear. Inelastic measuring tape made of fibreglass was used for recording the height of elders. Snellen's chart was used for testing vision. If the elder reads 6/18 or better, it was considered as normal vision, between 6/18 to 3/60 as low vision and visual acuity of less than 3/60 as blind. Hearing was tested as per the criteria laid down by Sharma⁵ after ensuring maximum possible silence. The elder was made to stand 20 feet away from the investigator and each ear was tested separately. Elders who can hear even the whispering voice were considered to have good hearing capacity and elders who cannot hear the whispering voice, but can hear the conversational voice were considered to have mild hearing loss. Moderate hearing loss was defined as hearing only on shouting and by severe hearing loss, elders cannot hear even on shouting. Elders who were dumb or had difficulty in articulation or who had stammering were considered to have speech disorders. The diagnosis made by clinical examination was

confirmed by the hospital records possessed by the individual. Certain chronic diseases like Diabetes mellitus, Epilepsy, Neurosis, Psychosis etc., already diagnosed by medical specialists with necessary investigations were accepted as such.

Data entry and analysis were done using the statistical package SPSS 10 version. The responses to the questions were coded and entered. Finally the data was summarized by frequency distribution and cross tabulation. Percentages and 95% confidence interval (CI) were calculated for health problems. Chi square test was used for assessing statistical significance.

RESULTS

A cross sectional study on health problems was carried out among the elders in nine selected old age homes in Chennai City. Out of these nine homes, one was run by government, two by private and six were trust managed old age homes. Free services were available in 5 homes, paid services in 2 homes and combined services in remaining 2 homes. In respect of the one government maintained old age home the medical services were arranged from nearby tertiary care government medical institution where the elders were referred for treatment. However there were no visits by physicians to this old age home. Twenty four hours medical service was available in one of the private old age home which provides services on payment basis. In the remaining seven old age homes, medical professionals visit the homes either periodically or when called. Out of nine old age homes, five have emergency transport facilities of which two were free homes.

There were 210 elders selected for the study by random sampling. Though the numbers of elders included in the study were 210, the investigator was able to interact with only 202 elders because of the poor mental status and sensory deficits of the remaining 8 elders. However, some information was collected from the caretakers. Among the 210 elders selected for the study, 132 (62.9%) were females and 78 (37.1%) were males. The largest proportion of elders 38.1% was in the age group 60 - 69 years, followed by 70-79 years (36.2%) and 80 years and above (25.7%). Mean age of males was 74.4 years with SD of 9.5 years. Mean age of females was 72.6 years with SD of 8.9 years.

Regarding educational status, 18.3% were illiterates. Illiteracy was more among females (22%) compared to males (12%). Regarding marital status of 210 elders, 113 (53.8%) were widow / widowers, unmarried were 56(26.7%) and 22 (10.5%) were separated from their spouse and remaining 19 (9%) were currently married. Of the 19 currently married elders, 12 of spouses reside with family and 5 in same old age home and 2 in some other old age homes. The details of their education and marital status are shown in table 1.

Table 1: Education and marital status of elders by sex

Characteristics	Male(%)	Female(%)	Total(%)
Education(N=202)			
Illiterates	9(12.0)	28(22.0)	37(18.3)
Primary	8(10.7)	20(15.7)	28(13.9)
Middle School	13(17.3)	19(15.0)	32(15.8)
High School	21(28.0)	49(38.6)	70(34.7)
Post high school diploma	10(13.3)	5(3.9)	15(7.4)
Graduation	11(14.7)	5(3.9)	16(7.9)
Post Graduation	3(4.0)	1(0.8)	4(2.0)
Marital status (N=210)			
Unmarried	29(37.2)	27(20.5)	56(26.7)
Married	12(15.4)	7(5.3)	19(9.0)
Widows/ widowers	28(35.9)	85(64.4)	113(53.8)
Separated	9(11.5)	13(9.8)	22(10.5)

Height and Weight: Height was recorded among 201 elders and the rest of the elders could not stand even with support for recording the height. Mean height of elders was 153.3 cms (SD 10.7 cms). Weight was recorded among 194 elders and the same could not be recorded in respect of 16 elders who could not stand without support. Mean weight of elders was 49.1 kg (SD 12.9) ranging from 23 to 97 kgs. Mean weight of males was 50.3 kg (SD 9.9). Mean weight of females was 48.3 kg (SD 14.5).

Health Problems: It was found that only 3.3% of elders were clinically free from health problem. The percentage of elders with single, two and three or more health problems were 15.7%, 31.9% and 49% respectively. Higher the age group, more the number of health problems. The difference was statistically significant ($p < 0.05$). More number of females have multiple health problems (Table 2).

The sex wise prevalence of health problems of elders with 95% CI is given in table 3.

Table 2: Number of health problems of elders by age and sex

Characteristics	Elders with health problems					p-Value		
	None (%)	Single (%)	Two (%)	≥Three (%)	Total			
Age in years	60-69	5(6.3)	14(17.5)	29(36.3)	32(40.0)	80	0.130	
	70-79	2(2.6)	10(13.2)	22(28.9)	42(55.3)			76
	80 & above	0(0.0)	9(16.7)	12(22.2)	33(61.1)			54
Sex	Male	1(1.3)	18(23.1)	21(26.9)	38(48.7)	78	0.095	
	Female	6(4.5)	15(11.4)	42(31.8)	69(52.3)	132		

Table 3: Prevalence of health problems among elders

Health problem	Male (%)	Female (%)	Total (%)	95% CI for total %
Hypertension	29(37.2)	54(40.9)	83(39.5)	32.9 - 46.1
Oral	30(38.5)	49(37.1)	79(37.6)	31.1 - 44.1
*Vision	29(38.7)	42(33.1)	71(35.1)	28.7 - 41.5
Musculoskeletal	22(28.2)	51(38.6)	73(34.8)	28.4 - 41.2
Respiratory	24(30.8)	33(25.0)	57(27.1)	21.0 - 33.0
GIT	21(27.3)	32(24.2)	53(25.2)	19.3 - 31.1
Endocrine disorder	13(16.7)	32(24.2)	53(21.4)	15.9 - 26.9
CNS disorder	14(17.9)	29(22.0)	43(20.5)	15.0 - 26.0
Skin	18(23.1)	25(18.9)	43(20.5)	15.0 - 26.0
*Insomnia†	9(12.0)	30(23.6)	39(19.3)	13.9 - 24.7
*Hearing	15(20)	21(16.5)	36(17.8)	12.5 - 23.1
Genitourinary	11(14.1)	24(18.2)	35(16.7)	11.7 - 21.0
Cardiovascular	11(14.1)	14(10.6)	25(11.9)	7.5 - 16.2
Speech difficulty	5(6.4)	7(5.3)	12(5.7)	2.6 - 8.8

*N=202(information could not be collected from remaining 8 elders due to their poor mental status and sensory deficits),others N=210.

†p<0.05-statistically significant difference between males and females.

The specific nature of illness under each of the health problems prevailing among the elders studied is furnished below.

Hypertension: Hypertension was prevalent among 83 elders (39.5%). Of the 83 hypertensive, 23 were newly diagnosed at the time of survey and the rest were under treatment.

Oral health problem: The overall prevalence of oral health problems among the elders studied was found to be 37.6%. The nature of oral health problems were edentulous (Absence of teeth) 21.4%, caries tooth 10.9%, oral ulcers 5.2% and use of dentures 1%.

Visual Problems: Of the 202 elders tested for vision, 131 (64.9 %) of elders had normal vision and 71 elders (35.1%) had visual problems. Low vision was the problem among 60 (29 %) elders and 11 (5.4 %) were found to be blind. The overall prevalence of visual problems among the elders studied was found to be 35.1%. The prevalence of visual problems was 18.2% among elders in the age group 60-69, 45.2% among the elders in the age group 70-79 and 46.2% among

the elders aged 80 and above and this difference was statistically significant (p<0.001).

Musculoskeletal problem: The overall prevalence of musculoskeletal problems among the elders studied was found to be 34.8%. The prevalence of musculoskeletal problems was 21.3% among elders in the age group 60-69,40.8% among the elders in the age group 70-79 and 46.3% among the elders aged 80 and above and this difference was statistically significant (p<0.01). The nature of musculoskeletal problems were arthritis 21.9%, fracture hip 7.6%, spondylitis 5.7%, kyphosis 0.5% and amputation of limb due to accident 0.5 %.

Respiratory diseases: The overall prevalence of respiratory diseases among the elders studied was found to be 27.1%. The nature of respiratory diseases were bronchial asthma 10%, lower respiratory infection 9.0%, chronic bronchitis 4.8%, upper respiratory infection 2.4% and treated tuberculosis 1.9%.

Gastrointestinal disorders: The overall prevalence of gastrointestinal disorders among

the elders studied was found to be 25.2%. The nature of gastrointestinal disorders were constipation 14.8%, gastritis 6.7%, indigestion 6.7%, loss of appetite 6.7%, haemorrhoids 2.4%, hernia 1.4% and diarrhoea 0.9%

Endocrine disorders: The overall prevalence of endocrine disorders among the elders studied was found to be 21.4%. The natures of endocrine disorders were Diabetes mellitus 20.5 % and hypothyroidism 1 %.

Central nervous system disorders and mental illness: The overall prevalence of central nervous system disorders and mental illness among the elders studied was found to be 20.5%. The prevalence was 27.5% among elders in the age group 60-69, 9.2% among elders in the age group 70-79 and 25.9% among the elders aged 80 and above and this difference was statistically significant ($p < 0.01$). The nature of central nervous system disorders were psychosis 6.2%, stroke 5.7% (4.3% with residual weakness and 1.4% without residual weakness), neurosis 3.3%, senile dementia 3.3%, epilepsy 1.4 %, ptosis 0.5 %, personality & character disorder 0.5 %.

Skin diseases: The overall prevalence of skin diseases among the elders studied was found to be 20.5%. The nature of skin diseases were eczema 6.7%, fungal disease 5.7%, allergic dermatitis 3.8%, diabetic ulcer 2.4%, trophic ulcer 1.9%, insect bite allergy 1.4% and bedsore 0.5 %.

Insomnia: The overall prevalence of insomnia among the elders studied was found to be 19.3%. Insomnia was observed to be more among females (23.6%) than among males (12%). This difference was statistically significant ($p < 0.005$).

Hearing: Of the 202 elders tested for hearing, 166 (82.2 %) had good hearing and 36 (17.8%) had hearing impairment. Hearing loss was mild among 4.5 % elders, moderate among 7.9 % elders and severe in 5.4% elders.

Genitourinary problems: The overall prevalence of genitourinary problems among the elders studied was found to be 16.7%. The natures of genitourinary diseases were urinary tract infection 4.3%, benign prostatic hypertrophy 3.8%, urinary incontinence 3.3%, hysterectomy 2.4%, uterine prolapse 1.4%, hydrocoele 0.9% and vaginitis 0.5%.
Cardiovascular diseases: The overall prevalence of cardiovascular diseases among the elders

studied was found to be 11.9%. The prevailing cardiovascular diseases were hypertension 39.5%, angina 4.8%, ischaemic heart disease 3.8%, congestive cardiac failure 1.4%, valvular heart disease 0.5 % and arrhythmia 0.5%. Elders with cardiovascular diseases were undergoing treatment.

Speech Disorders: The overall prevalence of speech disorders among the elders studied was found to be 5.7%.

DISCUSSION

This study included all types of old age homes i.e., government, private and trust managed old age homes. The elders from each home were selected randomly for the study. Henceforth the study results are representative for elders in other old age homes in Chennai and the findings can be extrapolated to other similar homes in India. This study showed that overall 96.7% of elders had one or more health problems. The percentage of elders with single, two and three or more health problems were 15.7%, 30.0% and 51% respectively. Multiple health problems were observed to be more among higher age group elders and among females. The spectrum of health problems covers nearly all the problems that are faced by geriatric population though their prevalence may vary in a community setting.

Totally 83 elders were having high BP readings through clinical examination. However the medical records and statement of elders indicated that only 60 elders were already diagnosed as hypertensive and were under treatment. The remaining 23 elders were suffering from undiagnosed hypertension and remain untreated. Heart failure and stroke episodes occur in association with old age and rising levels of blood pressure.⁶ Prevalence of hypertension varies widely in the literature. In a study conducted among the geriatric population in Nemilichery⁷ near Chennai, the prevalence of hypertension among elders was 18.5%. Among hypertensive, 25% though symptomatic, were not taking any treatment because of illiteracy, ignorance and poverty.

Oral Health Problems: In the present study, oral health problems were found among 37.6% of elders and toothlessness among 21% of elders. Earlier studies have shown that edentulous affects the health and the overall quality of life of the elderly.⁸ Loss of teeth causes dietary

restrictions and therefore the elderly may not be able to take the normal Indian diet. Efforts should be taken in old age homes to promote retention of teeth through oral health education and enabling them to access oral healthcare services.

Visual Problems: In a study conducted in Neman⁹, the combined proportion of blindness and visual impairment including cataract was very high 31.5%. This study also shows that nearly 35% of elders in old age homes have vision problem. With regular vision tests, suitable spectacles, surgery, drugs and special visual aids, most people can maintain a good eye sight and lead a full and independent life.¹⁰ Our survey highlighted the need to develop comprehensive eye care programs in old age homes.

Musculoskeletal Problems: Ageing is accompanied by osteoporosis of the skeleton. Osteoarthritis accounts for 90% of joint diseases affecting elderly. Gibson and Graham¹¹ reported that rheumatoid arthritis is the commonest problem in elderly patients. The overall prevalence of musculoskeletal problems among the elders studied was found to be 34.8% and arthritis was found to be the commonest musculoskeletal problem.

Respiratory Diseases: There has been an actual increase in the number of aged persons with respiratory diseases in the last few decades.¹² Nearly one fourth of elders in old age homes suffer from one or more respiratory diseases.

Gastrointestinal Disorders: This study reports constipation as the most common GIT problem among elders in old age homes. In a study conducted in Neman⁹, the prevalence of GIT problems was 15.8%. A greater proportion of them suffered from gastritis and acid peptic disease. Gastritis and indigestion was reported among 6.7% of elders in old age homes.

Endocrine Disorders: Diabetes mellitus is a long-term illness due to faulty carbohydrate metabolism. It is leading cause of death, as the population grows older. It is predicted that by 2025, India, China and United States will lead the world in the number of diabetics. In the United States, the National Health and Nutrition Examination Survey (NHANES III) Study found that about 18% of people aged 60 years and older have diabetes.¹³ Nearly one fifth of elders in old age homes suffer from Diabetes. Since detection of diabetes was beyond the scope of

the study, it may be assumed that there may be many diabetics who may remain undiagnosed. There are limited studies from India on the prevalence of diabetes in people over age sixty. Kuty¹⁴ reported a prevalence of 13.7% in persons aged 60 and above and increasing prevalence with age in Southern Kerala. Another study¹⁵ in India reported diabetes in 36% of persons aged 65-74 years and 42% in 75-79 years age group. In a study undertaken by Sidhartha Das, K.N.Padhiary¹³ at Bhubaneshwar, the prevalence was as high as 20% in the age group of 65 years and above. Studies¹⁵ have revealed that hypothyroidism is more common among elderly.

Central Nervous System Disorders and Mental Illness: The present study shows that prevalence of CNS disorders and mental illness among elders in old age homes was quite high (20.5%). It may be due to the fact that more number of elders with mental illness were institutionalized because of difficulty in caring them at home. Mental illness causes enormous human suffering and interferes with normal day today life.¹⁰ It causes pain and suffering not only to the patients but also to their care takers.

Skin Problems: All surveys have brought out high incidence of skin abnormalities in older persons.¹⁶ Common skin problems encountered among the elders in old age homes were Eczema 6.7%, Fungal disease 5.7% and Allergic dermatitis 3.8%.

Insomnia: The sleep pattern changes, as we grow old. The duration of sleep is shortened and the quality of sleep also becomes poorer. In addition, sleep may also be disturbed as a result of mental or physical illness. Insomnia includes taking a long time (more than 30 to 45 min) to fall asleep or waking up many times during the night, or waking up early and being unable to get back to sleep.¹⁰ This study showed high prevalence of insomnia 19.3% among elders. Significantly higher proportion of females suffers from insomnia than males. Sleep hygiene has to be taught to elders by health care providers in old age homes. Stress management or relaxation therapy will also of great help to them.

Hearing Problems: Hearing tends to deteriorate naturally, as we grow old. It may not be noticeable until about 60 years of age or so. This study shows that nearly 18% of elders in old age homes had hearing impairment. As per WHO report, the prevalence of difficulty in hearing

increased from 20% at ages 60-64 to three times, at ages 85-89.¹⁷ In a study conducted in Nemam⁹, the proportion of elderly with hearing problem and other ENT problems was found to be 28.5%. It is necessary that elders in old age homes have to be routinely screened for hearing problems.

Genitourinary Problems: Urinary incontinence or inability to hold urine is a common problem in older individuals, especially women. The magnitude of incontinence ranges from mild discomfort to severe disability and can lead to complete withdrawal from social life. McGrother et al reported in England that the prevalence of urinary incontinence was 11% in men and women aged 65 and above¹⁸. In this study the prevalence of urinary incontinence was 3.3% among elders in old age homes. The quality of life and self esteem of elders can be greatly affected by urinary incontinence and other genitourinary problems. These problems can be addressed by teaching them exercises to strengthen the muscles that control bladder and bladder training through medical professionals.

LIMITATIONS

One of major limitations was that the data relating to health problems of institutionalized elders was not available in the literature even after intensive search. Therefore comparative discussion could not be contemplated. The other limitation is investigations could not be done to confirm the various morbidities prevalent among the elders as the range of morbidities were very wide.

CONCLUSION

The study has brought out that the prevailing morbidity among institutionalized elders was high. The prevailing health problems especially of those of skin, eye and ear indicate the lack of adequate care in providing curative services. It may partly be due to the irregularity on the part of elders and partly due to the lack of adequate attention by the care takers in old age homes. The situation indicates the need for streamlining the medical care services in terms of quantity and quality from the medical faculty as well as old age home management. Also the elders need to be educated regarding their health problems and treatment.

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